S. D.—102

United States Department of Agriculture

BUREAU OF PLANT INDUSTRY

Office of Seed Distribution

WASHINGTON, D. C.

THE LAWN

[Adapted to the northern part of the United States]

While suitable soil and good drainage are very essential to the development of a lawn, constant and intelligent attention during the growing season is likewise necessary. The cardinal features of lawn making and maintenance are simple, and the services of a skilled gardener are not required to put them into practice; but if these simple cultural features are neglected inferior and disappointing lawns are sure to result.

The development of a satisfactory lawn depends to a large degree on the foundation upon which it has been started. A really good lawn rarely results from a poor beginning, and no reasonable amount of effort and expense will overcome mistakes in preliminary preparation.

SOIL AND SOIL PREPARATION

A suitable soil is the first consideration in lawn making. Especially is this true where the climate is unfavorable to the best growth of the turf-forming grasses. There are few soils where lawns are to be made that can not be improved by treatment, and in the case of most soils much treatment is necessary. Good drainage, good texture, and good preparation are essential considerations. Good drainage should be secured before further preparation is made. In few cases is tiling necessary for the ordinary lawn, but for extensive low-lying areas where thorough surface drainage and underdrainage are poor, tile properly laid will result in much improvement.

A deep loamy soil is easily made suitable for lawn purposes, since it already possesses good texture. If necessary, it can be enriched by the addition of barnyard manure, or if this is not available an application of 20 pounds of bone meal for an area of a thousand square feet may be substituted. In either case the material should be well incorporated with the soil. Stiff clay soils require both sand and vegetable matter before they are really suitable for the production of a good turf. There is little danger of using too much of either of these materials. A quantity of sand equivalent to a surface layer of 1 inch in depth, if worked into the clay, produces a permanent improvement in its texture. Even a smaller quantity is helpful, while much more can be used advantageously. On a lawn of average size it is entirely feasible to use sand for the purpose of improving stiff clay soils. It is also both practicable and desirable to use clay for improving light sandy soils. Decaying vegetable matter lightens the texture of clay soils, increases their water-holding capacity, and improves their drainage; it also improves sandy soils by making them more cohesive and more retentive of moisture. Thoroughly rotted and comminuted barnyard manure, good compost, or mushroom soil are all suitable forms of organic matter for the lawn. One-half ton to a thousand square feet ordinarily is sufficient. This should be thoroughly mixed with the soil. Organic matter can be supplied to the soil intended for a lawn much more successfully and usually more cheaply in the form of manure or compost than by means of green crops turned under.

Lime is commonly used in the preparation of soil for lawns. It is also very frequently used as a top-dressing for old lawns. Its use for the former pur-

39018°—25

pose may be justified under certain conditions where Kentucky bluegrass and white clover are the important lawn plants, but it should never be used where the bentgrasses or the fescues are grown. The use of lime as a top-dressing on established turf of any of the above lawn plants is to be discouraged, because of its tendency to greatly favor the growth of weeds.

Preliminary preparation, by which is meant the thorough stirring of the surface 6 or 8 inches of soil, should begin several weeks prior to sowing, to allow sufficient time for the ground to become thoroughly settled and for the weed seeds to germinate.

SEED AND SEEDING

There are several species of turf-forming grasses that can be used for lawn making in this country, but for the northern part of the United States Kentucky bluegrass, generally speaking, is the most desirable. For the best results it is commonly used in mixtures with other grasses. A mixture which has been thoroughly tested and is regarded as quite satisfactory for general lawn making is composed by weight approximately as follows:

17 parts Kentucky bluegrass.
4 parts recleaned redtop.
3 parts Italian ryegrass.
1 part white clover.

The following is a more simple mixture which by some is regarded as quite satisfactory:

4 parts Kentucky bluegrass.
1 part redtop.
¼ part white clover.

A slight modification of these proportions makes no material difference in the appearance or success of the lawn. A mistake which is commonly made in starting a lawn is that of using too little seed. A thick stand of grass is essential at the beginning, and in order to be certain of securing it seed of the above mixture should be sown at the rate of not less than 3 pounds to a thousand square feet.

The advantage of a mixture of Kentucky bluegrass, redtop, and Italian ryegrass lies in the fact that the seed of redtop and ryegrass germinates quickly and produces a good turf in a short time from seeding. Kentucky bluegrass seed, on the other hand, germinates very slowly, and the grass does not cover the ground as a rule until the following season. Close mowing soon causes the redtop to disappear and after the first year or two the turf is made almost entirely of bluegrass. White clover in the opinion of many adds to the appearance of the turf and mixes well with Kentucky bluegrass.

Early autumn sowing is much more satisfactory than spring seeding. South of New York and the New England States spring sowing should rarely, if ever, be practiced. Young grass does not stool well in the spring and summer and is not sufficiently aggressive to combat crabgrass and other summer annual weeds. In most of the area south of the New England States and north of the Potomac and Ohio Rivers the best time for sowing lawns is during the first week of September.

After the preliminary preparation, which involves the thorough working of the soil by some means, the surface of the area to be sown should be thoroughly fined with a rake or similar implement and bone meal applied at the rate of about 20 pounds to a thousand square feet. Bone meal is of much benefit to the young grass, since it assists it in making sufficient growth to pass the first winter in good condition. The main point to be observed in sowing is to sow the seed evenly and to cover uniformly but lightly. The covering can be done on a small area with an ordinary garden rake or on a large area with a weeder. Light rolling after covering is frequently beneficial.

REPAIR AND MANAGEMENT

It frequently is more difficult to improve an old lawn than to make a new one. Where the turf is very poor the remaking of the lawn is advised. It is commonly supposed that turf may be improved by resowing, and while there is considerable doubt with regard to the value of this practice, nevertheless it is recommended, since it involves relatively little expense, and even if the

turf is improved for a short time only it is well worth while. The resowing of an old lawn should be done at the same time of the year as new seeding, that is, in the early fall. If the lawn is patchy the areas to be improved should be scratched with a steel rake or similar implement and dressed with a mixture of good loam or compost with which the seed is mixed. The loam or compost forms a suitable medium for the germination of the seeds and the development of the young grass plants. In resowing an even or uniformly thin turf this mixture is advised. After it is applied it should be watered with a hose and later given a light rolling. Care should be taken when mowing or watering newly patched or seeded lawns to avoid disturbing the young grass.

GENERAL LAWN MANAGEMENT

The care of a lawn after seeding has much to do with its success. In most parts of the country constant attention is necessary in order that even a fair lawn may be maintained.

FERTILIZING

Most lawns need an occasional application of some good fertilizer, regardless of the kind of soil upon which they are established. Thoroughly rotted stable manure is an excellent fertilizer for grass provided it is not coarse. Manure well composted with sod and leaf mold and sifted before using makes a very satisfactory dressing. So, also, does soil from mushroom cellars that has been well fined and sifted. Coarse manure or humus dressings should not be applied until after the end of the growing season when winter has begun, and they should be raked off before spring commences. Compost dressings should be applied in the autumn or winter and again in the spring. The best results are obtained when the material is in such condition that nothing will be left to rake off. Bone meal is one of the best commercial fertilizers for the lawn. It is safe to apply and gives fairly quick results. The best time to apply it is in the late winter or very early spring. From 10 to 15 pounds to 1,000 square feet is a sufficient quantity to use.

Nitrate of soda and sulphate of ammonia are among the best quick-acting fertilizers for grass. They are very quickly soluble and readily available, but, unfortunately, unless they are applied carefully they burn the grass badly. Three pounds of either nitrate of soda or sulphate of ammonia for 1,000 square feet of surface is sufficient for one application. It is suggested that they be applied in a mixture with good compost consisting of 3 parts loam and 1 part finely divided manure or mushroom soil spread evenly over the surface of the lawn. After the mixture is applied it should be well watered with a hose. If this practice is followed carefully little damage from burning will result. If the compost is not available loam may be used.

Applications of nitrate of soda or sulphate of ammonia in the way here suggested can be made advantageously in the spring and early fall.

SANDING

Heavy clay soils are improved by applications of sand an eighth of an inch or more in depth. These may be made advantageously in the fall, winter, or early spring. Sharp, clean sand free from silt is most suitable for this purpose. While the sand works into the surface of the soil very quickly and disappears from view, it nevertheless produces a lasting and decidedly beneficial effect.

MOWING AND ROLLING

Good turf requires frequent cutting. Lawns ordinarily should be cut twice a week during the rapid-growing season. Very close cutting may be detrimental, but it is seldom that a lawn is injured by this means. While it usually makes little difference whether the clippings are removed or allowed to remain on the lawn, it is considered the best practice to remove them. The roller should be used discreetly, especially on clay soils. Reasonably heavy rolling in the spring to firm the turf and smooth the surface of the lawn is quite helpful. Rolling during the summer on clay soil is neither necessary nor advisable.

WATERING

During the dry periods of spring, summer, and fall lawns require watering. There is little definite information as to the best time of day to water them, but it is generally thought advisable to apply the water when the grass shows signs of needing it. Any type of sprinkler that distributes the water evenly and freely is quite satisfactory. It is a good practice to begin sprinkling lightly, allowing the water to soak into the surface of the soil slowly before a full application is made. In this way the absorption is greatly increased and the quantity of water that can be applied without run-off is much larger than by the ordinary method.

ERADICATION OF WEEDS

While weeds are troublesome in the lawn throughout the growing season, they are particularly so from the latter part of June until frost. During this period crabgrass, which is by far the worst lawn weed south of New York, is especially aggressive. There is really no satisfactory method of checking the growth of crabgrass except to cut or pull the plants while they are still small. This is a tedious and expensive practice, but where a good lawn is involved the results justify the expense. Much difficulty is usually experienced in cutting crabgrass with an ordinary lawn mower on account of its semi-prostrate character. This difficulty can be overcome to a certain extent if the grass is raked prior to mowing. The rake raises the branches of the grass so that they can be cut reasonably close with an ordinary lawn mower. It is impossible, however, to cut crabgrass sufficiently close completely to prevent the formation of seed.

There are many other weeds that are troublesome in the lawn, not only in the spring but in the summer and autumn. Among the most important are dandelion, plantain, chickweed, veronica, and oxeye daisy. Chemical sprays are somewhat more effective in eradicating these weeds than they are in eradicating crabgrass. However, the best method of eradicating them is by means of a spud or similar implement. In the main, the use of chemical sprays on lawn weeds has not given very satisfactory results. The weed problem can best be solved by making the conditions as favorable as possible for the turf grasses and maintaining a strict watch at all times to remove troublesome weeds as they appear. In constructing a lawn it is highly important that it be so protected that the overwash will not carry over it the seeds of noxious weeds. If this precaution is taken and no coarse-manure top-dressings are used the weed problem is greatly lessened.

SHADY LAWNS

To produce a good lawn in shade, especially in dense shade under trees and shrubs, is a very difficult matter. The common lawn grasses are not particularly shade-loving grasses, but they can be made to thrive reasonably well in light shade if given proper treatment.

By thorough watering and the liberal use of fertilizers the evil effect of shade can to some extent be overcome. Rough-stalk meadow grass (*Poa trivialis*) is the best shady lawn grass for the northeastern part of the United States. The seed is now commercially available. This grass requires the same care as the lawn-grass mixture referred to in this circular.

MARCH 3, 1925.

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1925